1900MNRAS..60..520.

Cometary Observations at the Liverpool Observatory. By W. E. Plummer.

Comet 1898 *X* (*Brooks, October* 20).

Greenwich Mean Time of Observation. 1899.	h	m	s	✐ − ✱ R.A. m	s	No. of Comparisons.	Apparent R.A. of ✐. h	m	s	✐ − ✱ Declination. ′	″	No. of Comparisons.	Apparent Declination of ✐. °	′	″	Log. Factor of Parallax in α.	in δ.	Star of Comparison.
Oct. 24	10	2	14·5	+5	59·67	10	15	55	59·38	−7	23·2	5	+50	36	9·6	+9·6394	−0·8421	1
	10	2	14·5	−3	6·90	10	15	55	59·51	+3	10·2	5	+50	36	8·1	+9·6394	−0·8421	2
30	7	7	22·4	−1	39·18	Ret.	17	0	42·06	+5	52·1	Ret.	+33	26	43·4	+9·6058	−0·7041	3
31	6	58	4·7	−1	14·61	10	17	7	45·22	+2	33·3	6	+30	44	2·1	+9·5840	−0·7122	4
Nov. 1	7	3	27·0	−1	15·16	10	17	14	8·30	−1	53·0	5	+28	6	3·2	+9·5761	−0·7335	5
1	7	3	27·0	−1	30·38	10	17	14	8·32	−5	19·6	5	+28	6	4·9	+9·5761	−0·7335	6
3	6	50	50·1	+	2·88	Ret.	17	24	56·14	−4	54·5	Ret.	+23	13	54·5	+9·5473	−0·7514	7
6	6	56	34·3	−	40·82	12	17	37	38·66	−2	7·7	6	+16	46	29·6	+9·5332	−0·7912	8
7	6	8	40·5	+	0·62	Ret.	17	41	0·78	−1	23·4	Ret.	+14	55	4·5	+9·4817	−0·7816	9
10	6	4	33·6	+	39·47	10	17	49	46·21	−3	54·6	5	+ 9	44	33·6	+9·4731	−0·8087	10
10	6	4	33·6	−1	26·11	8	17	49	46·13	−1	46·0	5	+ 9	44	34·0	+9·4731	−0·8087	11

October 24.—The comet is a fairly bright object, with well-defined centre, which makes the observation easy.
October 30.—The comet seen through some haze with difficulty. The observation is somewhat uncertain.
November 7.—The comet is bright, but very ill-defined, and the observations lack coherence.

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Comet 1899 *I* (*Swift*, *March* 4).

1899.	Greenwich Mean Time of Observation. h m s	∥ − ✶ R.A. m s	No. of Comparisons.	Apparent R.A. of ∥. h m s	∥ − ✶ Declination. ′ ″	No. of Comparisons.	Apparent Declination of ∥. ° ′ ″	Log. Factor of Parallax in α.	in δ.	Star of Comparison.
Mar. 7	7 2 59·5	−2 40·70	3	3 33 24·63	+ 1 17·9	3	−23 13 10·7	+9·3358	−0·9121	12
11	7 13 4·6	−1 8·42	2	3 14 58·34	+ 2 38·9	2	−17 50 34·0	+9·4198	−0·8935	13
12	7 15 2·9	−1 39·36	3	3 10 53·80	+ 5 21·0	3	−16 35 51·6	+9·4666	−0·8831	14
14	7 9 6·0	+ 43·37	5	3 3 16·55	− 5 26·1	5	−14 14 5·2	+9·4460	−0·8830	15
15	7 11 3·1	+2 10·89	5	2 59 39·48	− 4 48·0	5	−13 6 19·4	+9·4582	−0·8804	16
15	7 11 3·1	− 51·09	5	2 59 39·33	+ 49·7	5	−13 6 16·8	+9·4582	−0·8804	17
16	7 12 51·7	+3 23·28	Ret.	2 56 10·10	+ 8 17·0	Ret.	−12 0 44·4	+9·4689	−0·8752	18
17	7 13 22·5	+ 43·74	2	2 52 46·58	−10 22·6	2	−10 57 15·4	+9·4773	−0·8719	19
17	7 13 27·9	+3 31·70	5	2 52 46·51	− 5 58·6	5	−10 57 14·6	+9·4773	−0·8719	20
18	7 20 59·3	+1 32·32	5	2 49 27·92	− 4 8·3	5	− 9 55 32·7	+9·4929	−0·8673	21
20	7 22 6·8	+7 38·38	Ret.	2 43 4·46	− 5 49·1	Ret.	− 7 57 44·9	+9·5055	−0·8618	22
22	7 24 13·7	−6 33·54	Ret.	2 36 55·38	+ 2 3·7	Ret.	− 6 7 29·4	+9·5169	−0·8570	23
May 16	11 22 54·0	+0 39·22	5	22 53 5·16	+ 0 57·7	5	+40 22 30·1	−9·5952	−0·8525	24
18	11 5 36·3	−1 15·54	6	22 34 51·17	− 9 40·5	4	+43 35 11·3	−9·6267	−0·8357	25
18	11 5 36·3	+ 29·05	6	22 34 51·43	−11 55·4	6	+43 35 12·1	−9·6267	−0·8357	26
26	10 16 40·5	−1 1·89	5	20 29 11·40	− 59·9	5	+55 36 16·4	−9·7925	−0·6149	27
27	9 57 29·8	+ 58·57	4	20 6 17·47	+ 4 56·6	4	+56 28 0·3	−9·8025	−0·5893	28
29	11 6 44·2	−3 3·72	5	19 15 23·86	− 6 32·3	5	+57 20 35·0	−9·7411	−0·1600	29
29	11 6 44·2	+3 13·61	5	19 15 23·49	−11 6·9	5	+57 20 38·6	−9·7411	−0·1600	30
30	10 22 0·4	−1 14·88	6	18 50 49·16	− 4 11·4	6	+57 17 11·7	−9·7582	−0·2378	31
31	10 19 13·1	−4 57·28	5	18 25 55·74	− 3 15·7	5	+56 54 44·7	−9·7240	−0·1296	32
31	10 19 13·1	+2 25·14	5	18 25 55·72	− 39·1	5	+56 54 47·1	−9·7240	−0·1296	33

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1899.	Greenwich Mean Time of Observation. h m s	☄−✱ R.A. m s	No. of Comparisons.	Apparent R.A. of ☄. h m s	☄−✱ Declination. ′ ″	No. of Comparisons.	Apparent Declination of ☄. ° ′ ″	Log. Factor of Parallax in α.	in δ.	Star of Comparison.
June 1	9 56 58·3	+1 18·65	3	18 2 22·33	− 7 0·7	3	+56 14 54·7	−9·7094	−0·1311	34
2	9 50 11·6	−2 6·19	5	17 39 58·25	+ 6 55·9	5	+55 18 46·9	−9·6698	−0·0746	35
2	9 50 11·6	−1 24·31	5	17 39 57·99	+ 6 23·1	5	+55 18 47·0	−9·6698	−0·0746	36
4	10 11 44·0	+1 0·31	4	16 59 58·70	+ 2 37·5	4	+52 47 29·7	−9·4874	−9·8461	37
5	10 10 29·8	−5 33·28	5	16 42 55·27	+ 1 22·8	5	+51 19 15·6	−9·4032	−9·8645	38
5	10 10 29·8	+ 45·15	5	16 42 55·13	+ 1 38·3	5	+51 19 16·1	−9·4032	−9·8645	39
6	10 14 3·7	+1 54·00	6	16 27 34·80	− 7 53·5	6	+49 45 22·1	−9·2956	−9·9066	40
8	10 24 41·4	−7 36·73	6	16 1 38·70	+ 1 10·9	6	+46 29 42·0	−8·9564	−0·0371	41
8	10 24 41·4	+1 56·62	6	16 1 38·68	+10 41·0	6	+46 29 40·9	−8·9564	−0·0371	42
9	10 3 32·5	+2 20·51	5	15 50 57·44	− 6 51·0	5	+44 53 2·7	−9·0078	−0·1313	43
9	10 3 32·5	+1 27·28	5	15 50 57·39	+ 3 45·4	5	+44 53 3·6	−9·0078	−0·1313	44
10	10 45 11·2	−5 5·52	Ret.	15 41 0·81	+ 4 13·1	Ret.	+43 13 18·3	+8·2304	−0·1838	45
12	10 36 4·0	−1 45·00	6	15 24 42·71	− 8 38·5	6	+40 6 33·3	+8·6720	−0·2993	46
12	10 36 4·0	−1 57·35	6	15 24 42·63	+ 4 12·4	6	+40 6 34·6	+8·6720	−0·2993	47
13	10 21 46·1	−2 43·51	Ret.	15 17 51·60	+ 5 13·4	Ret.	+38 38 4·2	+8·5843	−0·3409	48
14	10 48 59·9	+ 19·83	Ret.	15 11 31·72	− 2 4·5	Ret.	+37 10 8·0	+9·0363	−0·4025	49
15	11 6 22·0	+1 42·16	Ret.	15 5 50·90	+ 9 1·2	Ret.	+35 46 19·2	+9·1912	−0·4531	50
16	10 49 55·3	−2 13·40	Ret.	15 0 51·80	+ 6 35·0	Ret.	+34 27 46·0	+9·1451	−0·4752	51

March 7.—The comet was seen long before any star of comparison could be seen in the light sky of twilight owing to the low altitude; the definition was very unsatisfactory.

March 11–22.—The conditions for seeing very unfavourable; a correction for difference of refraction has been applied.

May 16.—The comet is bright but diffused.

May 27.—Observations interrupted by clouds.

June 10.—Clouds; sky very light.

June 13.—Seen with difficulty.

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Tuttle's Comet.

Greenwich Mean Time of Observation.	☄ − ✶ R.A.	No. of Comparisons.	Apparent R.A. of ☄.	☄ − ✶ Declination.	No. of Comparisons.	Apparent Declination of ☄.	Log. Factor of Parallax in α.	in δ.	Star of Comparison.
1899. h m s	m s		h m s	′ ″		° ′ ″			
Apr. 4 8 11 22·0	+0 19·45	Ret.	3 10 2·37	+ 9 1·2	Ret.	+22 59 26·5	+9·5791	−0·8076	52
10 8 28 16·3	−0 56·81	Ret.	3 32 12·41	+ 6 20·6	Ret.	+20 41 36·0	+9·5737	−0·8178	53

April 4.—The comet appeared as a small round nebula of about one minute in diameter, in which neither condensation nor nucleus could be detected.

April 10.—The comet is at the limit of visibility, and cannot be profitably observed with this instrument.

Comet 1899 *IV* (*Tempel II.*)

Greenwich Mean Time of Observation.	☄ − ✶ R.A.	No. of Comparisons.	Apparent R.A. of ☄.	☄ − ✶ Declination.	No. of Comparisons.	Apparent Declination of ☄.	Log. Factor of Parallax in R.A.	in δ.	No. of Reference.
1899. h m s	m s		h m s	′ ″		° ′ ″			
July 26 10 39 12·1	+0 56·76	Ret.	20 46 40·49	+2 18·6	Ret.	−21 21 35·7	−9·2816	−0·9136	54
28 12 19 51·2	−1 58·57	Ret.	20 49 8·26	−7 2·2	Ret.	−22 30 18·6	−8·4073	−0·9296	55
30 11 6 30·3	−4 10·63	Ret.	20 51 27·27	−6 22·1	Ret.	−23 34 27·6	−9·1361	−0·9247	56
Aug. 1 11 21 55·8	+2 37·26	Ret.	20 53 50·12	−4 52·0	Ret.	−24 39 32·4	−9·0188	−0·9286	57

July 26.—The comet faint and ill-defined; but seen no better later in the evening, owing to the increase of moonlight.

July 30 and August 1.—The places are very doubtful, and are hardly likely to be of use in future discussion.

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